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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,375	09/19/2003	Timothy L. Proulx	2003P11412US	8494

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EXAMINER	
MAYO III, WILLIAM H	
ART UNIT	**PAPER NUMBER**
2831	

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/666,375	PROULX, TIMOTHY L.	
	Examiner	Art Unit	
	William H. Mayo III	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *12-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 19-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *September 19, 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *September 19, 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-11 and 19-23 are drawn to cable, classified in class 174, subclass 113R.

   II. Claims 12-18 are drawn to method of forming a cable which is classified in class 29, subclass 825.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the shielding of the first group and the second group could be done during the same time as opposed to shielding the groups separately. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Herbert Dubno on October 15, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-11 and 19-23. Affirmation of this election must be made by applicant in

replying to this Office action. Claims 12-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

4. The information disclosure statement filed September 13, 2003 has been submitted for consideration by the Office. It has been placed in the application file and the information referred to therein has been considered.

Specification

5. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

6. The abstract of the disclosure is objected to because in lines 3-4, the abstract refers to purported merits or speculative applications of the invention, which is improper for the abstract. Correction is required. See MPEP § 608.01(b).

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

(e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(k) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

7. The disclosure is objected to because of the following informalities: The specification lacks the proper headings as disclosed above. The applicant should insert the proper headings to provide the specification with clarity.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-4, 9-11, 19, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Adams et al (Pat Num 5,937,950, herein referred to as Adams). Adams discloses a cable (Figs 1-5) which is capable of reducing crosstalk during ultrasonic wave operation (i.e. the conductors contain shields and therefore would reduce

crosstalk, Col 4, lines 20-25). Specifically, with respect to claim 1, Adam discloses a cable (28) comprising four individual cables (24a-24d), each individual cable (24a-24d) comprising four signal conductors (not shown), wherein the first signal conductors comprise a first group of signal conductors (i.e. output conductors, not shown) and a second group (i.e. excitation conductors) which are different than the first group of signal conductors (output conductors, not shown) and wherein the first group of signal conductors (output conductors, not shown) comprise a conductive separation layer (i.e. shield, not shown) to separate the first group of signal conductors (output conductors, not shown) from the second group of signal conductors (excitation conductors, not shown, Col 4, lines 3-14). With respect to claim 2, Adam discloses that a first plurality of ultrasound transducer elements (22) are connected with the first group of ultrasound signal conductors (output conductors, not shown) and the second group of ultrasound signal transducer elements (22) are connected with the second group of ultrasound signal conductors (excitation conductors, not shown), wherein the first group of signal conductors (output conductors, not shown) are different than the second group of signal conductors (excitation conductors, not shown, Col 4, lines 3-14). With respect to claim 3, Adam discloses that a first plurality of transmit beam former (22, i.e. transducer is a beam former) are connected with the first group of ultrasound signal conductors (output conductors, not shown) and the second group of transmit beam former (22, i.e. transducer is a beam former) are connected with the second group of ultrasound signal conductors (excitation conductors, not shown), wherein the first group of signal conductors (output conductors, not shown) are different than the second group of signal

conductors (excitation conductors, not shown, Col 4, lines 3-14). With respect to claim 4, Adam discloses that the first group of ultrasound signal conductors (output conductors, not shown) comprises a transmitting bundle of conductors (i.e. output conductors) and the second group of ultrasound signal conductors (excitation conductors) comprises a receive bundle (i.e. input conductors, Col 4, lines 8-14). With respect to claim 9, Adam discloses that the first and second group of signal conductors (output and excitation conductors, not shown) are bundles of wires (Col 4, lines 8-12). With respect to claim 10, Adam discloses that the first group of signal conductors (output conductors, not shown) occupy the center of the cable (28) and is surrounded by a shield (not shown) and the second group of signal conductors (excitation conductors, not shown) occupy the periphery of the cable (28) outside the shield (not shown), wherein the second group of signal conductors (excitation conductors, not shown) are themselves, along with the first signal conductors (output conductors, not shown), surrounded by an additional shield (not shown, Col 4, lines 20-26). With respect to claim 11, Adam discloses that the that the first group of signal conductors (output conductors, not shown) occupy the center of the cable (28) and is surrounded by a shield (not shown) and the second group of signal conductors (excitation conductors, not shown) occupy the periphery of the cable (28) outside the shield (not shown), wherein the second group of signal conductors (excitation conductors, not shown) are themselves, along with the first signal conductors (output conductors, not shown), surrounded by an additional shield (not shown, Col 4, lines 20-26). With respect to claim 19, Adam discloses a ultrasound system (Figs 1-2) comprising a first

plurality of transducer elements (22) are connected with the first group of conductors (output conductors, not shown) along a transmit aperture (62, i.e. slot shown in Fig 3) and the second group of transducer elements (22) are connected with the second group of conductors (excitation conductors, not shown), in a receive aperture (62, i.e. slot shown in Fig 3), wherein the first group of signal conductors (output conductors, not shown) comprise a conductive separation layer (i.e. shield, not shown) to separate the first group of signal conductors (output conductors, not shown) from the second group of signal conductors (excitation conductors, not shown, Col 4, lines 3-14). With respect to claim 21, Adam discloses that the first group of signal conductors (output conductors, not shown) occupy the center of the cable (28) and is surrounded by a shield (not shown) and the second group of signal conductors (excitation conductors, not shown) occupy the periphery of the cable (28) outside the shield (not shown), wherein the second group of signal conductors (excitation conductors, not shown) are themselves, along with the first signal conductors (output conductors, not shown), surrounded by an additional shield (not shown, Col 4, lines 20-26). With respect to claim 22, Adam discloses that a protective cable covering (i.e. outer jacket shown around cables 24a-24d) surrounding the first and second groups of conductors (output and excitation conductors, not shown), the conductive separation layer (i.e. shield around the first group of conductors, not shown) and the additional separation layer (i.e. shield around the second group of conductors, not shown, Cols 3 & 4, lines 65-67 & 20-26, respectively). With respect to claim 23, Adam discloses that the separation layer (i.e. shield, not shown) is a group of served wire (i.e. individual wires, Col 4, lines 12-14).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 5-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (Pat Num 5,937,950) in view of Daane et al (Pat Num 6,580,034, herein referred to as Daane). Adams discloses a cable (Figs 1-5) which is capable of reducing crosstalk during ultrasonic wave operation (i.e. the conductors contain shields and therefore would reduce crosstalk, Col 4, lines 20-25) as disclosed above with respect to claims 1 & 19. Specifically, with respect to claim 20, Adam discloses that the first group of signal conductors (output conductors, not shown) occupy the center of the cable (28) and is surrounded by a shield (not shown) and the second group of signal conductors (excitation conductors, not shown) occupy the periphery of the cable (28) outside the shield (not shown), wherein the second group of signal conductors (excitation conductors, not shown) are themselves, along with the first signal conductors (output conductors, not shown), surrounded by an additional shield (not shown, Col 4, lines 20-26).

However, Adam doesn't specifically disclose the first and second groups being coaxial cables (claim 5), nor the first and second groups being at least one ribbon of conductors (claim 6), nor the conductive separation layer being a braided shield layer

(claims 7 & 20), nor the conductive separation layer being one or more ribbons of grounded conductors around the first group of signal conductors (claim 8).

Daane teaches a cable assembly (Figs 1-8) that provides protection against external noise (i.e. EMI) and permits significant flexibility of the cable (Col 2, lines 1-2). Specifically, with respect to claim 5, Daane teaches a cable assembly (10) comprising a cable (16, as shown in Fig 4) attached to a transducer (30), wherein the cable (16) has a first group of conductors (1st group of 33) and a second group of conductors (2nd group of 33), wherein the first group and the second group of conductors (1st and 2nd group of 33) both comprise coaxial cables (Col 2, lines 38-39). With respect to claim 6, Daane teaches first and second groups (1st and 2nd groups of 33) may comprise multiple ribbon layers (34 as shown in Fig 2). With respect to claims 7 & 20, Daane teaches that the conductive separation layers (50) may comprise a braided shield (Col 2, lines 65-67). With respect to claim 8, Daane teaches that the separation layer (50) comprises one or more ribbons of grounded conductors (i.e. the outer shields of the ribbon cables 34 are grounded to the ground terminal of the circuit board, Col 2, lines 49-52).

With respect to claims 5-8 and 20, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable assembly of Adam to comprise the signal conductor and shield configuration as taught by Daane because Daane teaches that such a configuration provides protection against external noise (i.e. EMI) and permits significant flexibility of the cable (Col 2, lines 1-2) and since it has been held that a change in form cannot sustain patentability where

involved is only extended application of obvious attributes from a prior art. *In re Span-Deck Inc. vs. Fab-Con Inc. (CA 8, 1982) 215 USPQ 835.*

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Knop et al (Pat Num 6,342,678), Takamura et al (Pat Num 5,876,326), Naylor et al (Pat Num 5,491,299), Adams et al (Pat Num 5,530,203), Suzuki et al (Pat Num 5,569,158), Ono et al (Pat Num 5,976,070), and Despard (Pat Num 6,310,295), all of which disclose cables having first and second group of conductors, wherein the first and second group of conductors are different.

Communication

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (571)-272-1978. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William H. Mayo III
Primary Examiner
Art Unit 2831

WHM III
October 31, 2004